Amendments to Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (currently amended) A data communication system, comprising:
- a first unit and a second unit, wherein the first unit is configured to transmit digital signals to the second unit, the first unit comprising:
    - a data transmitter for emitting first digital signals within first time intervals;
    - a pseudo random-generator or a random generator for generating pseudo random values or random values, respectively,
    - a combining unit for combining the first digital signals ~~emitted by the data transmitter~~ with the pseudo random values or the random values <u>at substantially the entirety of intervals in which the first digital signals are absent</u>; and
    - a control unit for controlling the combining unit in such a manner that pseudo random values or random values are transmitted at times other than the first time intervals;

and the second unit comprising:
- a data receiver connected to the data transmitter by a transmission path, ~~for receiving the first digital signals~~<u>; and</u>
- <u>a second combining unit connected to the data receiver for combining the received first digital signals with the pseudo random values or random values.</u>

2. (currently amended) The data communication system according to claim 1, wherein a signaling line is provided between the data transmitter and the data receiver, wherein the data transmitter signals the presence of first digital signals, pseudo random values, ~~and/or~~ <u>or</u> random values to the data receiver.

3. - 4. (canceled)

5. (currently amended) The data communication system according to ~~claim 4~~ claim 1, wherein an additional transmission path for transmitting the pseudo random values or random values is provided, so that at the second unit a combination with the pseudo random values or random ~~values can take~~ takes place synchronously with a combining with the pseudo random values or random values at the first unit.

6. (previously presented) The data communication system according to claim 1, wherein the second unit comprises a second pseudo random-generator or random generator for generating pseudo random values or random values of a same sequence as the pseudo random generator of the first unit.

7. (previously presented) The data communication system according to claim 6, wherein an additional transmission path is provided for synchronizing the pseudo random generator or random generator of the first unit and the pseudo random generator or random generator of the second unit.

8. (previously presented) The data communication system according to claim 6, further comprising a unit for synchronizing the pseudo random generators or random generators of the first unit and the second unit.

9. (previously presented) The data communication system according to claim 8, wherein the unit for synchronizing the pseudo random generators or random generators of the first unit and the second unit is designed so that at a beginning of each signal transmission a synchronization sequence is used instead of pseudo random values or random values, which enables a synchronization of the pseudo random generators or random generators of the first unit and the second unit.

10. (currently amended) The data communication system according to claim 9, wherein for the synchronization sequence, the data transmitter is adapted to emit a predetermined or known bit pattern which is then combined with pseudo random values or random values of the pseudo random generator or random generator of the first unit by the combining unit connected on an

output side of the pseudo random generator or random generator; and a control unit of the data receiver is adapted to perform at various times a synchronization of the pseudo random generator or random generator of the second unit with received data from the first unit ~~until a known transmission pattern occurs as a result of the combination~~.

11. (previously presented) The data communication system according to claim 10, wherein for simplified synchronization between the data transmitter and the data receiver, a short pseudo random or random sequence is used at first, and after a given period of time, or after a synchronization with this pseudo random or random sequence, a switch-over is made to a longer pseudo random or random sequence.

12. (currently amended) A method for transmitting digital signals between a plurality of units of which at least one first unit comprises a data transmitter and at least one second unit comprises a data receiver, and the at least one first unit is connected by at least one transmission path to the at least one second unit, the method comprising the steps of:[[;]]

    ~~by~~ inserting pseudo random values or random values ~~between~~ at substantially the entirety between intervals at which ~~all of~~ the first digital signals are present;

    ~~emitted by~~ emitting a Boolean combination of the first digital signals and the inserted pseudo random values or random values ~~the data transmitter~~, so that in a spectrum of a signal to be transmitted, gaps between spectral lines are substantially reduced, so that amplitudes of the spectral lines are decreased, however without substantially increasing the entire bandwidth needed for transmission; and receiving the Boolean combination and further combining the pseudo random values or random values with the Boolean combination.

13. (currently amended) A method for transmitting digital signals between a first unit comprising a data transmitter, and a second unit comprising a data receiver, the data transmitter and the data receiver are coupled by a transmission path, the method comprising the steps of:

-     emitting first digital signals with the data transmitter;

-     generating pseudo random values or random values with a pseudo random generator or a random generator;

- encoding the digital information signals by combining the first digital signals with the generated pseudo random values or random values; and
- receiving the encoded digital signals with the data receiver;

wherein the method includes the further step of:

- inserting true random data or pseudo random data in substantially all intervals between the first digital signals;
- forming a Boolean combination of the true random data or pseudo random data between the first digital signal; and
- further combining the true random data or pseudo random data with the Boolean combination.